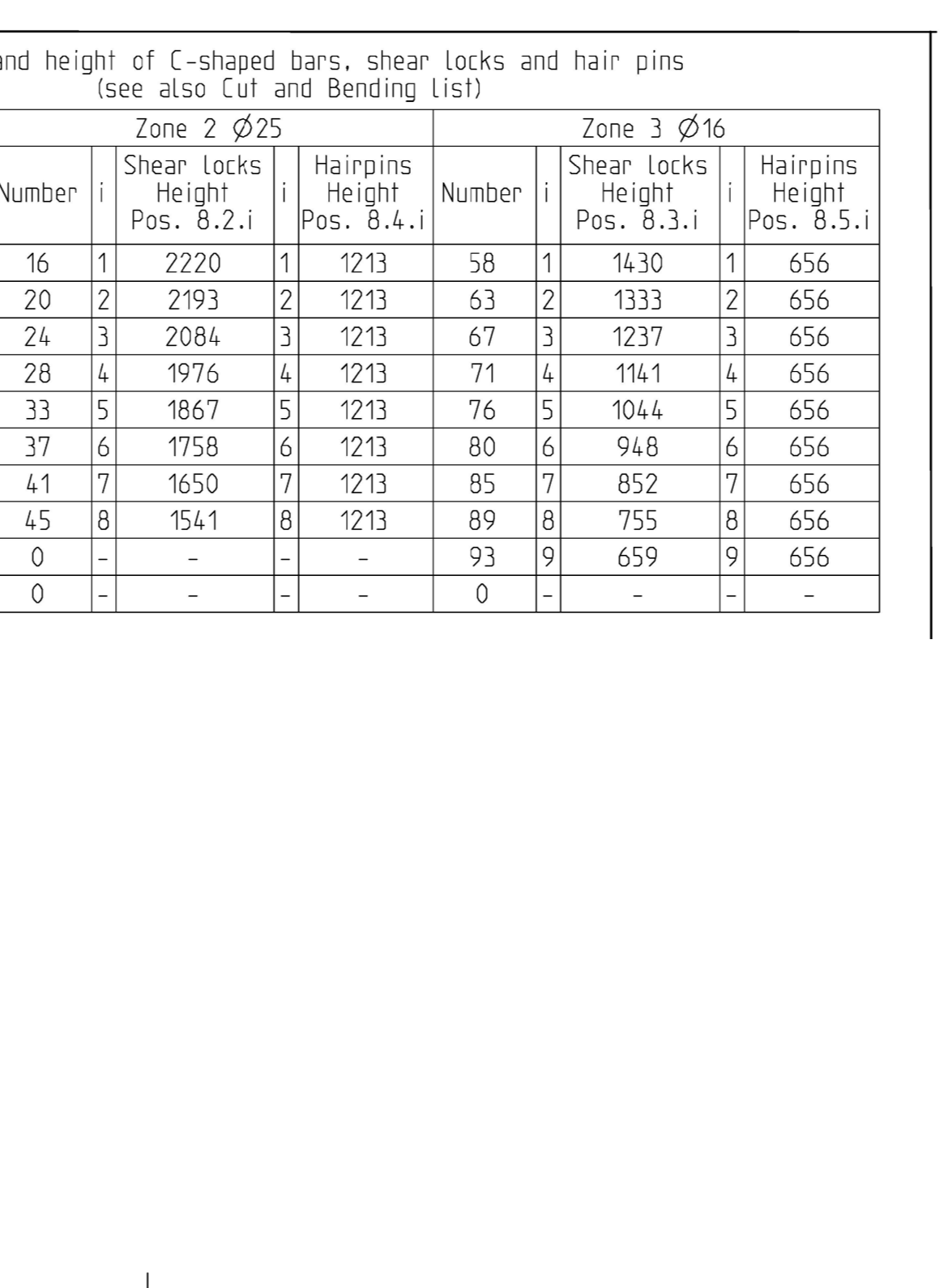
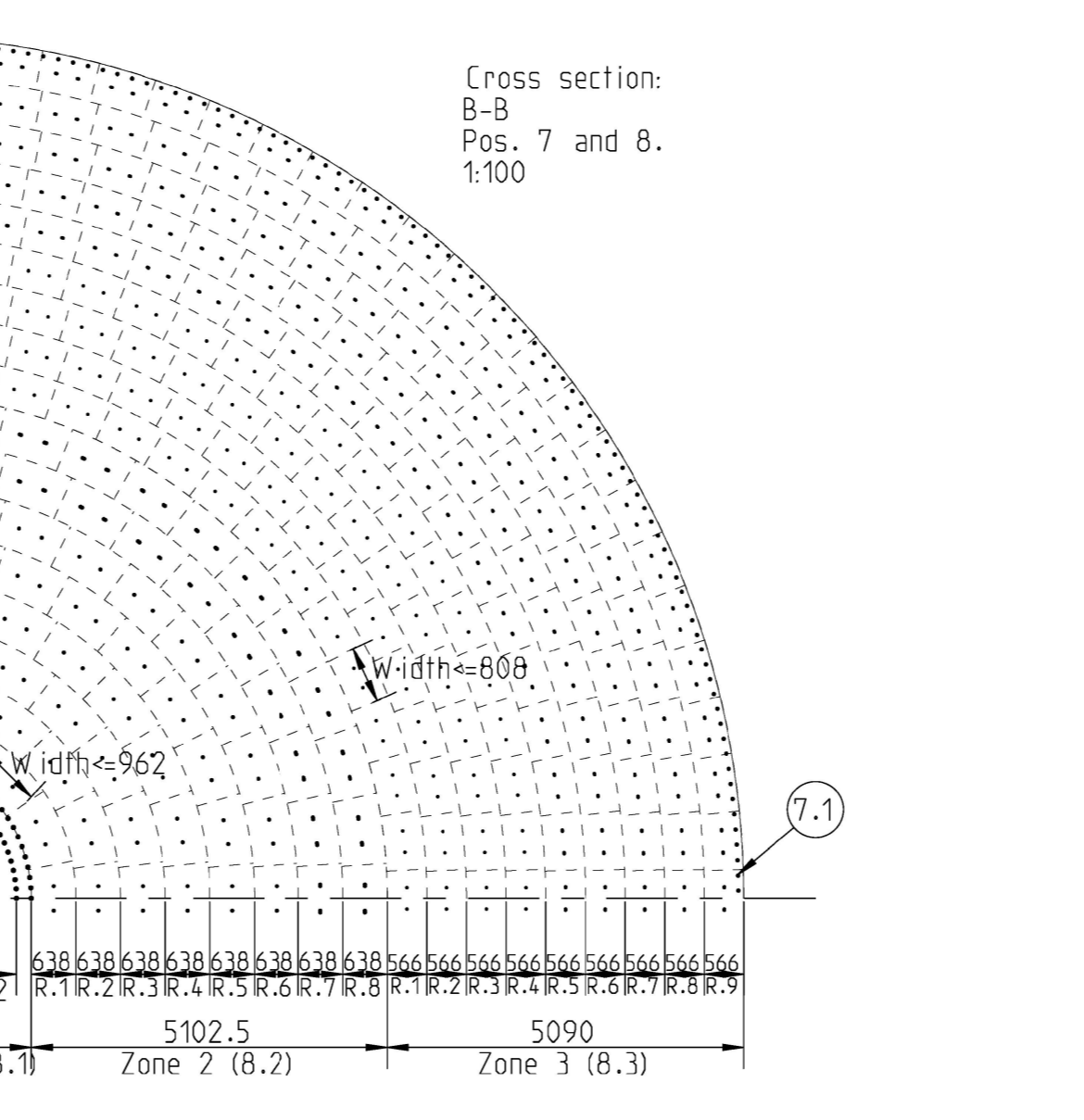
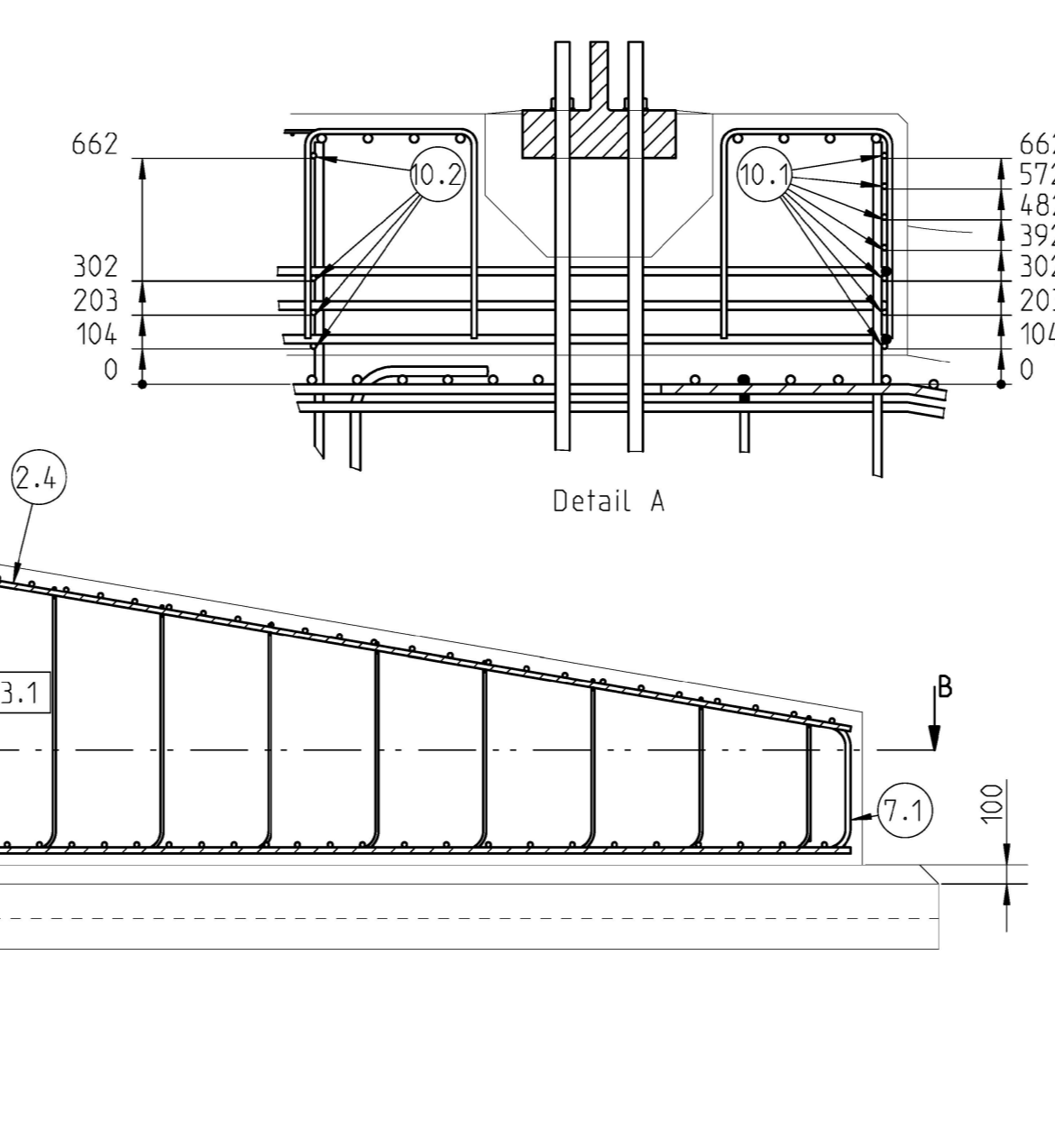
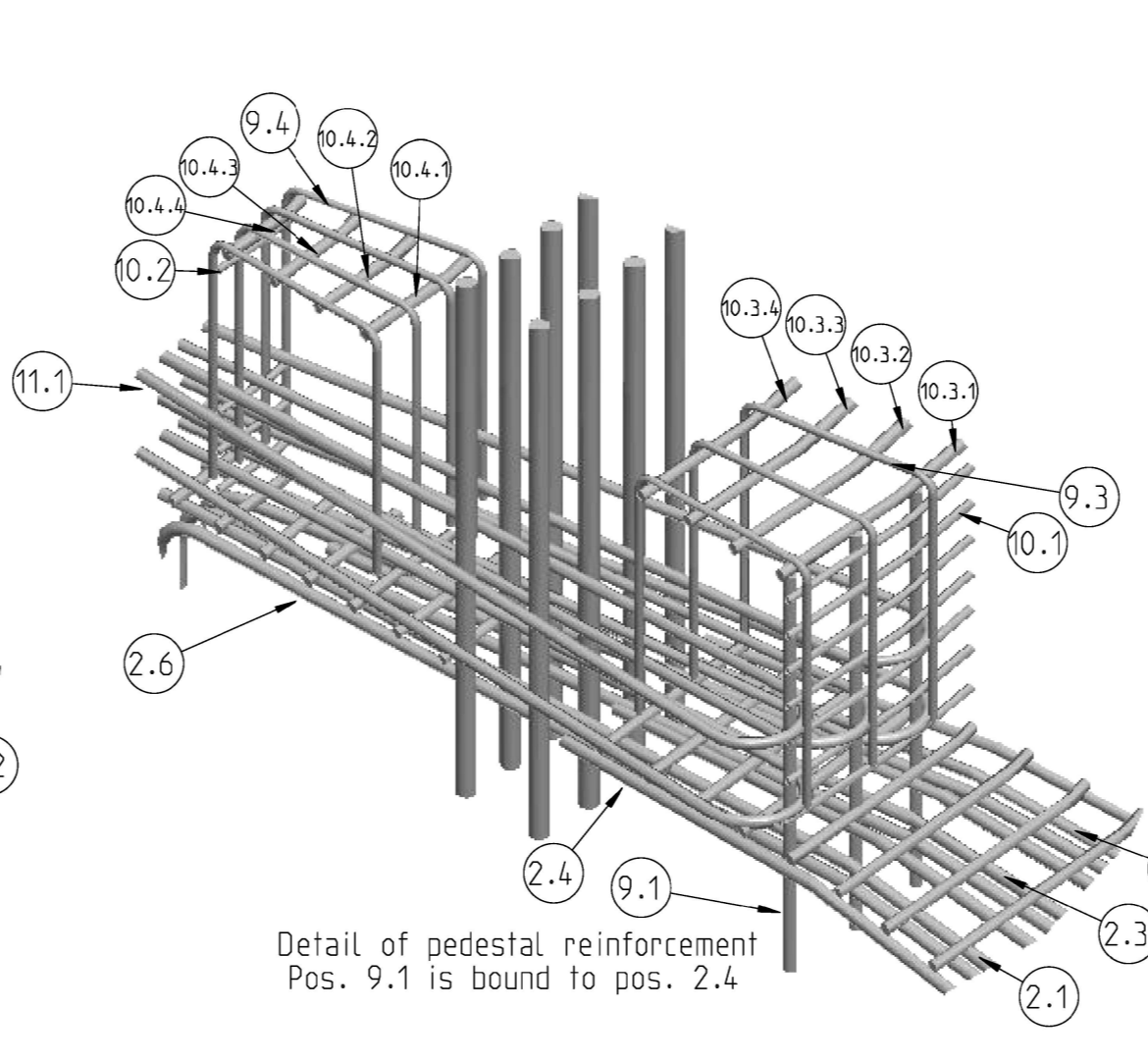


Zone	Zone 1 C-shape Ø28			Zone 2 Ø25			Zone 3 Ø16						
	Number	Pos.	Height	Number	Pos.	Height	Number	Pos.	Height				
Ring 1	22	8.1.1	2308	16	1	2220	1	1213	58	1	1430	1	656
Ring 2	22	8.1.2	2308	20	2	2193	2	1213	63	2	1333	2	656
Ring 3	-	-	-	24	3	2084	3	1213	67	3	1237	3	656
Ring 4	-	-	-	28	4	1976	4	1213	71	4	1141	4	656
Ring 5	-	-	-	33	5	1867	5	1213	76	5	1044	5	656
Ring 6	-	-	-	37	6	1758	6	1213	80	6	948	6	656
Ring 7	-	-	-	41	7	1650	7	1213	85	7	852	7	656
Ring 8	-	-	-	45	8	1541	8	1213	89	8	755	8	656
Ring 9	-	-	-	0	-	-	-	-	93	9	659	9	656
Ring 10	-	-	-	0	-	-	-	-	0	-	-	-	-



**Information for design approver:**  
 Loads: 0637-4072 V00, calculation: 0538-9184 V00  
 Soil condition to be fulfilled:  
 Assumed characteristics of soil parameters: friction angle 26° or undrained shear strength 45 kN/m²  
 Weight of backfilling is included in stability and shall not be removed.  
 Max. groundwater level: 0 m under terrain.  
 No drainage required.  
 Additional stiffness: min. 30 Gm/rad equal to an Es, stat= 6000 kN/m², Es, dyn=17000 kN/m² (x=0.35) for sand or Es, stat=3000 kN/m², Es, dyn=22000 kN/m² (x=0.40) for clay.  
 Max. plastic design soil pressure: 122 kN/m², constant over substitute area, with a PSF of 1.1 on wind. 0.9 on lower weight and backfilling. 1.0 on foundation weight.  
 Max. elastic soil pressure 135 kN/m² with PSF equal to 1.0 for all loads.  
**Specifications:**  
 All works carried out acc. to EN 1992-1-1/AC 2004; Design of Concrete Structures, EN 1997-1/AC 2009; Geotechnical design, general rules, EN 1997-2/AC 2009; Geotechnical design, investigation and testing, General description: 0005-8491 V04. Design life time: 20 years.  
**Anchor cage, approval drawing 0038-9182 V00:**  
 The anchor cage incl. adjustment feet is provided by Vestas as loose parts or assembled.  
 The anchor cage shall be set upon the blinding layer and adjusted to the correct position vertically and horizontally by using the adjustment feet of the lower flange. During casting, which must be done simultaneously inside and outside the cage, great care must be taken to ensure that the cage does not displace and that the lower flange is in full contact with compacted concrete, below and above flange. Max. vertical deviation after concreting +/- 4 mm.  
 Weight of anchor cage, app. 18000 kg total.  
 Anchors shall be post tensioned according to approval drawing 0038-9182 V00.  
**Concrete:**  
 Concrete works acc. to EN 13787:2009 "Execution of concrete structures".  
 The concrete must be composed, mixed and prepared according to EN 206-1 in the strength class C30/37 for plates, C45/55 for pedestal. Exposure class: XC4 - XC1 / XC3 / XC5 / XC1  
 Maximum aggregate size in the area of the bottom and top reinforcement: 16mm in other areas max. 32mm  
 Blinding layer min. 100 mm.  
 Low-creeping and low-shrink concrete for exterior buildings units, low heat of hydration  
 Min. required density of concrete due to stability: 2305 kg/m³.  
 Coverage: Com = 60 mm against form work or blinding layer, Com = 110 mm against soil (no formwork).  
 Concrete quality control according to EN 206-1.  
**Reinforcement:**  
 Steel bars S500 ductility class B or C according to EN 10080 with min fyk = 500 N/mm².  
**Grout:**  
 Non-shrink grout, min. compression strength C30/105  
 Min. compression strength at time of post tension 55 N/mm² and after 1 day: 10 N/mm².  
 Post tension force 385 kN for 385 kN for 385 kN for 10-9 anchors and an elongation of 6.9 to 7.9 mm.  
**Cable conduits (PVC tubes) - NOT a Vestas delivery:**  
 See general description in "Switchgear installation vs foundation tubes" 0017-5653.  
 See site specific cable layout for actual number and size of conduits.  
**Earthing:**  
 See "Vestas Earthing System", esp. description 0019-2515 "Earthing an anchor cage foundation"  
 incl. copper conductors, bolts, nuts and washers delivered with the anchor cage.  
**Reinforcement Cut and Bending List: 0038-9182 V00**  
**Radial bars, bottom part:**  
 1.1 22 pcs Ø28 x 1140 mm, through anchors.  
 1.2 22 pcs Ø32 x 1137 mm, through anchors.  
 1.3 44 pcs Ø32 x 1080 mm, through anchors.  
 1.4 88 pcs Ø32 x 1005 mm, outside anchors.  
 1.5 116 pcs Ø20 x 588 mm, outside anchors.  
 1.6 88 pcs Ø32 x 801 mm, above 1.1-1.3.  
**Radial bars, top part:**  
 2.1 22 pcs Ø28 x 1141 mm, through anchors.  
 2.2 22 pcs Ø28 x 1141 mm, through anchors.  
 2.3 44 pcs Ø28 x 1101 mm, through anchors.  
 2.4 88 pcs Ø28 x 1025 mm, outside anchors.  
 2.5 116 pcs Ø16 x 595 mm, outside anchors.  
 2.6 88 pcs Ø28 x 829 mm, below 2.1-2.3.  
**Concentric bars outside anchors, bottom part:**  
 3.1 Ø25 ring Ø2403, 1 pcs, L=1844 mm, outer ring no. 1.  
 3.2 Ø25 ring Ø2403, 1 pcs, L=1844 mm, outer ring no. 67.  
 See table in Cut & Bending List.  
**Concentric bars outside anchors, top part:**  
 4.1 Ø25 ring Ø4583, 3 pcs, L=5217 mm, outer ring no. 1.  
 4.2 Ø25 ring Ø4583, 8 pcs, L=10974 mm, outer ring no. 62.  
 See table in Cut & Bending List.  
**Concentric bars inside anchors, bottom part, 1 layer below and 1 layer above pos 1:**  
 5.1 Ø25 ring Ø3748, 4 x 2 pcs, L=8192 mm, ring no. 10.  
 5.2 Ø25 ring Ø3844, 2 x 2 x 4 pcs, L=8112 mm, ring no. 10.  
 5.3 Ø25 ring Ø3844, 2 x 2 x 4 pcs, L=8112 mm, ring no. 10.  
**Concentric bars inside anchors, top part, 1 layer above pos 2:**  
 6.1 Ø25 ring Ø7352, 1 x 1 x 1 pcs, L=5345 mm, ring no. 1.  
 6.2 Ø25 ring Ø3844, 1 x 3 x 3 pcs, L=5228 mm, ring no. 10.  
 6.3 Ø25 ring Ø3844, 1 x 3 x 3 pcs, L=5228 mm, ring no. 10.  
 6.4 Ø25 ring Ø3844, 2 x 6 x 1, L=1-10, ring no. 1. Total number of rings: 10. See Cut & Bending List.  
**Vertical bars at edge:**  
 7.1 312 pcs Ø25 x 1318 mm, at outer edge.  
**Shear locks and hair pins - see Cut and Bending list for correct lengths**  
 8.1 44 pcs Ø28 x 2988 mm, shear locks inside anchor cage (zone 1) - C-shaped.  
 8.2 244 pcs Ø25 x approx. 4850 mm (mean value), shear locks in punching zone (zone 2).  
 8.3 882 pcs Ø16 x approx. 2689 mm (mean value), shear locks in shear zone (zone 3).  
 8.4 244 pcs Ø25 x approx. 2465 mm (mean value), hair pins for all zone 2.  
 8.5 882 pcs Ø16 x approx. 1800 mm (mean value), hair pins for zone 3.  
**Vertical bars and bows in pedestal:**  
 9.1 88 pcs Ø25 x 1428 mm, vertical bar outside anchors.  
 9.2 22 pcs Ø25 x 1428 mm, vertical bar inside anchors.  
 9.3 88 pcs Ø16 x 1684 mm, outer bows, see Cut & Bending list.  
 9.4 88 pcs Ø16 x 1685 mm, inner bows, see Cut & Bending list.  
**Horizontal rings in pedestal:**  
 10.1 4 rings Ø16 x Ø3124, 4 x 1 x 4 pcs L=8142 mm, of outer vertical bars pos 9.1.  
 10.2 4 rings Ø16 x Ø3124, 4 x 1 x 4 pcs L=8102 mm, of inner vertical bars pos 9.2.  
 10.3.1 1 ring Ø25 x Ø3085, 1 x 3 x 3 pcs L=1303 mm, ring 1 under bow pos 9.3.  
 10.3.2 1 ring Ø25 x Ø3355, 1 x 3 x 3 pcs L=1020 mm, ring 2 under bow pos 9.3.  
 10.3.3 1 ring Ø25 x Ø3085, 1 x 3 x 3 pcs L=1378 mm, ring 3 under bow pos 9.3.  
 10.3.4 1 ring Ø25 x Ø4814, 1 x 3 x 3 pcs L=1845 mm, ring 4 under bow pos 9.3.  
 10.4.1 1 ring Ø25 x Ø3085, 1 x 2 x 2 pcs L=1303 mm, ring 1 under bow pos 9.4.  
 10.4.2 1 ring Ø25 x Ø3115, 1 x 2 x 2 pcs L=1590 mm, ring 2 under bow pos 9.4.  
 10.4.3 1 ring Ø25 x Ø3085, 1 x 2 x 2 pcs L=1584 mm, ring 3 under bow pos 9.4.  
 10.4.4 1 ring Ø25 x Ø3172, 1 x 1 x 1 pcs L=8864 mm, ring 4 under bow pos 9.4.  
**Hooks under grout trench (splitting bars)**  
 11.1 132 pcs Ø25 x 3389 mm, bent at 181.2 deg., see Cut & Bending list.  
**Z-Bars under the anchor flange**  
 12.1 88 pcs Ø12 x 2488 mm, under base flange, see Cut & Bending list for detailed geometry.  
 12.2 1 ring Ø12 x Ø4866, 1 x 3 x 3 pcs, L=530 mm, ring placed on Z-bars pos. 12.1.  
 12.3 1 ring Ø12 x Ø4866, 1 x 3 x 3 pcs, L=530 mm, ring placed on Z-bars pos. 12.1.  
**Shrinkage mesh, cut to match cable conduits and adjustment feet**  
 13.1 Ø235 mm top reinforcement mesh ø17 / 150 mm or equivalent with min. 524 mm/m.  
 13.2 Ø565 mm bottom reinforcement mesh ø10 / 150 mm or equivalent with min 524 mm/m.  
**Tolerances:**  
 All not specified tolerances: +/- 10 mm  
**Remarks:**  
 Dimensions in mm. Reinforcement shall be tied with steel wire per 500 mm minimum, no welding permitted.  
 The anchor cage is rotated to place the door in the right direction.  
 Basic anchorage length for C30/37: lb = 35.7d x Ø for good conditions.  
 Basic anchorage length for C45/55: lb = 31.9d x Ø for other conditions.  
 Lap length: Ls = 1.4 x lb. Bending diameters: 7 x Ø for Ø >= 20 mm, 4 x Ø for Ø < 20 mm.  
 All over top of bars shall be staggered.  
**Bonding- and overlap lengths, bending diameters:**  
 Size Anchor Overlap Bending Ø Remark  
 Ø25 185 132 650 Bottom radial bar (pos 1)  
 Ø28 185 168 650 Top radial bar (pos 2)  
 Ø25 170 1082 175 Bottom concentric ring outside anchors (pos 3)  
 Ø25 1028 1438 175 Top concentric ring outside anchors (pos 4)  
 Ø25 108 988 175 Bottom concentric ring inside anchors (pos 5)  
 Ø25 1008 1412 175 Top concentric ring inside anchors (pos 6)  
 Ø16 132 1412 64 Concentric ring in pedestal (pos 10)  
 Blinding layer S1 m3, concrete 734 m3, grout 2.64 m3, reinforcement 75 t, reinforcement ratio 102 kg/m3

**REGIONE BASILICATA**

PROGETTO PER LA REALIZZAZIONE DI UN PARCO EOLICO DA 36 MW NEL COMUNE DI GENZANO DI LUCANIA (PZ)

Numero articolo/Riferimento

Progettato da: Ing. M. Marfellucci  
 Controllato da: Ing. M. Marfellucci  
 Nome file: C\_25  
 Data: 16/03/2016  
 Scala: 1/60

Fondazione Tipo Aerogeneratori

SKYWIND S.p.A.  
 via Marconi, 6 - 04024 Grotta (LT) Italia

Edizione: 2  
 Foglio: 1/1